

Chemistry I

Solutions Worksheet 7.023r

1 gallon = 3.8 Liters	1 million = 10^6
1 billion = 10^9	micro (μ) = 10^{-6}
nano (n) = 10^{-9}	pico (p) = 10^{-12}

Name _____

Date _____ Period _____

Mr. D. Scott; CHS

SHOW THE PROPER WORK IN THE SPACE PROVIDED

- 1) If the concentration of hexane in water is 50.0 ppm, how many grams are in 5.0 liters?
- 2) If the concentration of lead in air is 30.0 ppb, how many grams are inhaled with a 2.0 liter breath?
- 3) If the concentration of DDT is 12.0 ppm in the tissue of a fish and a Bald Eagle eats 2 fish per day for one full year (365 days) and assuming the average mass of the fish is 400. grams, what is the maximum mass of DDT that could accumulate in the body of the eagle?
- 4) If the concentration of Hg in drinking water is 3.00 ppb (EPA legal limit is 2 ppb), and you drink 1.00 liter per day for 5 years, how much Hg will you ingest over that period of time? (assume that this is the only source of Hg)
- 5) The recommended daily allowance (RDA) of iodine in the human diet is 150 μ g for both males and females between the ages of 11 and 18. Iodine becomes toxic at high doses however with deaths reported from ingesting as little as 2 to 3 grams. Iodized salt contains at least 30 ppm of iodine. How many grams of salt would you need to eat each day to provide the RDA of iodine? How many grams of salt would you need to eat to get a fatal dose of 2 grams of iodine?
- 6) The optimum daily allowance of vitamin B₂ is between 50 and 300 mg. The range in this amount is due to different ages and body weights across the general population. Vitamin B₂ is found primarily in meat, milk, cheese, eggs, enriched white flour, and spinach. If milk contains 33 ppm of vitamin B₂, how much milk would you need to drink to get 200 mg of vitamin B₂?
- 7) Oatmeal, plain – nothing added but water, contains 15 ppm magnesium (dry weight). The RDA of Mg for a healthy average teenager is 300 milligrams. How much oatmeal would supply this quantity?